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ABSTRACT

This report describes the measures of user and librarian satisfaction (or subjective evaluation) in a study which gathered data on 80 presearch interviews in seven medical libraries. The study was conducted (1) to identify verbal and nonverbal behaviors that facilitate, maintain, or impede information exchange in interviews between search intermediaries and library users requesting online bibliographic searches: (2) to identify tasks that are accomplished by the librarian to facilitate information exchange: and (3) to objectively code videotaped presearch interviews in terms of the extent to which those tasks were accomplished. Chapters discuss the rationale, design, pretesting, administration, and plan for analysis of the user and librarian satisfaction forms, and detail the results of the analysis. Tables display data patterns and correlations, and a bibliography lists eight references. (FM)

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SATISFACTION MEASURES IN PRESEARCH INTERVIEWS

by

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April 1981

A report of the Presearch Interview Project
(NLM Grant No. 1 R01 LM03074-01)

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I. INTRODUCTION

1. The Presearch Interview Project

This work is one of five related research reports of the Presearch Interview Project. The entire project will be briefly described below. A more complete description is contained in a progress report* and the final report for the project.

The purpose of this project as a whole was to objectively indicate the adequacy of information exchange in the interview and show what behaviors and tasks performed by the librarian affect the ultimate success of the search. Information exchange is the primary purpose of the presearch interview. The librarian must find out enough about the information needs of the requester to attempt to meet them by using a computer-based literature search service. The requester must find out not only what the librarian needs to know in order to perform the best possible search, but also something about how the system works, charges, delivery time, etc. Since the information need can only be met through the librarian, information exchange during the presearch interview is critical. To achieve our objective of identifying the aspects of the presearch interview that are related to positive evaluation of the event, we studied behaviors in the interview, perceptions of search analysts and users, and subjective evaluations. This report describes our measures of user and librarian satisfaction, or subjective evaluation.

Other components of the project are: an analysis of verbal behaviors (Crouch, 1981), a task analysis (Atherton, 1981), an analysis of nonverbal behaviors (Genova, 1981), and an analysis of the responses in the debriefing sessions that followed the interview (Wargula, Lucia, and Fargnioli, 1981). Extensive demographic and situational data were also gathered. The previously mentioned progress report describes the latter in detail. The data that are important for this report are the user and librarian satisfaction measures. These are described in more detail below.

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*Progress report for the NLM grant entitled "Evaluation of the Presearch Interview" (Grant No. 1 R01 LM03 074 01), May 1, 1979-January 15, 1980 (Crouch and Atherton, 1980).

2. Overview of Data Gathering for PIP

Seven libraries were chosen as sites for gathering data. Two were located in medical centers, two in medical colleges, one in a specialized hospital (Veterans Administration), and two in city hospitals. The number of librarians who participated in the study at a site varied from one to six; in total, 19 different librarians participated.

A total of 82 interviews were videotaped. In addition to the videotapes, situational information (such as, was a terminal used during the interview), requester satisfaction questionnaires, librarian satisfaction questionnaires, audiotapes of the debriefing interviews with requesters and with librarians, and demographic questionnaires filled out by requesters and librarians were obtained during the data gathering process.

At each library the steps taken in data gathering were:

1. Explain the procedures to librarians and obtain their signature on permission forms.

2. Meet requester and obtain signature on permission form. (Most requesters came for an interview by appointment knowing that videotaping and the research activities would take place.)

3a. Videotape interview.

3b. Record situational data (e.g., was a terminal used).

4a. Librarian fills out satisfaction questionnaire.

4b. Requester fills out satisfaction questionnaire and demographic data sheet.

5. Requester participates in "debriefing" interview.

6. Repeat 2-5 for all interviews.

7. Each librarian participates in "debriefing" interview for 1-3 of the interviews they videotaped. (Librarians that were taped in more than three interviews were not "debriefed" for all of them.

8. Each librarian fills out a "task analysis" questionnaire and a demographic data questionnaire.

The videotapes of all the interviews and the audiotapes of the "debriefing" sessions were transcribed in full. The quantifiable data (situational information, satisfaction measures, and demographic data) were stored in computer files and documented in a project report (Tessier and Fargnioli, 1980). Other reports make use of the videotapes and/or their transcripts, as well as the situational data and the satisfaction measures in analyzing the presearch interviews themselves (Cochrane, 1981; Crouch, 1981; Genova, 1981).

II. SATISFACTION MEASURES IN PRESEARCH INTERVIEWS

This section describes the rationale, design, pretesting, administration, and plan for analysis of the user and librarian satisfaction forms. The term satisfaction will be used interchangeably here with the term evaluation of success.

The research design called for "measurement on those more subjective aspects of success immediately following the presearch interview, before the actual search is performed." In analysis, these subjective evaluations are the criterion or dependent variables against which the tasks, verbal behaviors, and nonverbal behaviors have been tested in identifying facilitating searcher-client behaviors.

1. Rationale

User satisfaction, or the user's subjective evaluation of interview success, has been defined by the investigators elsewhere (Tessier, 1977). Our concern is with the internal evaluation or affective states of the user and the search analyst as these pertain to the presearch interview. The assumption of the approach is that the client and the search analyst make evaluations regarding the interview. These can be measured by direct questioning.

Two objectives were identified in constructing the questionnaire: to develop a reliable and valid instrument and to develop a multidimensional instrument.

A review of the information literature (Tessier, 1979) identified few discussions or scales for measuring subjective interview success: Carmon and Briggs (1975) and Hitchingham (1979) fielded interview questions along with results oriented questions, and Gothberg (1974) developed an interview satisfaction scale for her reference study. The communication and psychological measurement literature yielded desiderata for scale construction and one interview satisfaction scale of note (Hecht, 1979). These are the major points drawn from the literature:

(a) To ensure reliable measurement of subjective interview success, a set of questions rather than a single question should be fielded. An index, e.g., the sum of the responses for all the questions for a given person improves the reliablility of the measure. Indexing or scale construction also allows for the observation of true variability since the range of responses is increased by summing the item scores for each individual. The literature recommends scales particularly in cases of a response bias which restricts range and skews the data--the typical case in highly positive user satisfaction measures.

(b) The studies by Carmon and Briggs, Hitchingham, Gothberg and Hecht yielded particular questions argued in those studies to be valid measures of interview satisfaction.

(c) Interview satisfaction is conceptually multidimensional, encompassing both task and socio-emotional components. In measuring satisfaction, the dimensions have not been empirically validated. Hecht's work, for example, failed to derive multiple dimensions through factor analysis. The information literature did not include any relevant correlational studies.

(d) The results of previous studies suggested that interview satisfaction is a somewhat insensitive dependent variable. Gothberg, for example, accounted for only 10% of the satisfaction variance with a controlled experiment in interviewer style; Hecht was unable to identify any variation in conversation satisfaction that could be attributable to the relationship of the conversing people or their characteristics. Dervin (1979), by selecting a quota of dissatisfied clients, accounted for over 50% of the satisfaction variance where remembered characteristics of the client-patient interview were the independent variables. The sampling quota required screening 5 respondents to obtain each dissatisfied client. Her sampling strategy could not be employed in the field study of this project. Her work, however, indicates that true variability can be measured, and that insensitivity may be partially attributable to an expected under-representation of dissatisfied respondents.

From the literature then, the conclusion was drawn to develop a multiple question questionnaire. The questions, taken together, should be varied in content to tap the dimensions of satisfaction identified from the literature. Also, the questions from previous studies should be used as far as possible, in order to allow cross study comparisons. The issue of insensitivity would be addressed by multiple questions, scale construction to enhance variability, and administration procedures, but not by quota sampling.

Questionnaire design was also determined by the project objectives of analysing task, verbal and nonverbal behaviors. Dimensions of satisfaction were identified and derived from the literature that could be argued to be sensitive to the three different independent variable types. Each of the independent variable types (task, verbal, and nonverbal) are defined and described in separate reports (Cochrane, 1981; Crouch, 1981; Genova, 1981). The hypothesized relation to satisfaction is described here.

First, the interview task behaviors are those searcher and client behaviors oriented toward providing or obtaining the appropriate printout. It follows that task satisfaction measures are those that refer to the transfer of information for the search or that refer to the quality of the search results. Task satisfaction measures are results and information oriented. The task satisfaction measures should show more sensitivity to task behaviors.

Second, verbal behaviors and nonverbal behaviors have socio-emotional, or relationship, components. That is, the verbal and nonverbal behaviors are expected to affect the perceived style and relationships in the interview. Affective, nontask oriented evaluation of the interview, such as enjoyment, comfort, etc. should be more sensitive to these aspects of the interview.

The dimensions of satisfaction important to this study had not been empirically validated in the interview literature. A third kind of interview satisfaction, global satisfaction, addresses this issue. Global measures are those tapping the summary evaluative response of the user or search analyst. Where the dimensional measures assume that the respondent focuses on particular aspects of the interview, global measures assume that the respondent focuses on the event as a whole and his response to it. Theoretically, the dimensional approach decomposes the overall response into its component parts. Global measures should be sensitive to both task and affective responses. However, these might obscure evaluative responses to some particular behaviors that are dimension specific.

In sum, the project objectives of identifying facilitating behaviors in three variable classes -- task, verbal and nonverbal -- implied that dimension specific satisfaction measures were needed. However, the dimensions had not been validated in the literature, although satisfaction was argued to be multidimensional. Also, from the literature, summed scales were found to be more reliable. However, in terms of the specific project objectives, summary scales might prove insensitive to dimension specific behaviors. The decision, then, was to include task specific, affect specific, and global measures of interview satisfaction.

Analysis would include standard methods of scale construction: factor analysis and logical classification. In analysis, particular questions, dimension scales, and summed scores would be used as appropriate.

2. Questionnaire Design.

This section describes the satisfaction questionnaire. Constraints on instrument design and the actual questions are described. The reasoning outlined above first indicated a satisfaction scale tapping both global and dimensional evaluations. Field conditions forced further constraints on instrument design: length and specificity.

(a) Length. A one page limit was imposed on the satisfaction questionnaire (see Tables 1 and 2). The limit was set in consideration of the amount of time that the study required of each participant: the videotaping of the interview, providing personal and query data on forms in addition to satisfaction responses, and then the stimulated recall session. One page, about ten questions, could be completed quickly but would be sufficient to represent the satisfaction dimensions.

(b) Specificity. Questions about specific aspects of the interview, e.g. librarian demeanor, interruptions, selection of search terms, were excluded from candidacy. These specific evaluation questions might bias the stimulated recall sessions, which were intended to encourage to respondent to focus on aspects important to him.

A 7 point Likert agree-disagree format was selected for the questions. Such scales typically allow: clear delineation of the evaluation in sentence form; an adequate number of scale intervals to obtain variation at the positive end; scale reversals to ensure that response bias is minimized; and a concise format without crowding for easy completion. The positive evaluation interval would be assigned a score of 7; the most negative response 1.

The particular questions selected for the satisfaction questionnaire are listed in Table 3, classified by logical types, and indicating other studies which used a similiar question. The questions were restated for a similar scale for search analysts.

Table 1. Presearch Interview Project to User

The purpose of these questions is to obtain your opinions about your interview with the search analyst. Please indicate the degree to which you agree or disagree that each statement describes YOUR interview. Use the fourth or middle position to represent "neutral," then moving out from the center, "slight" agreement, then "moderate" agreement, and finally, "strong" agreement.

1. I enjoyed working with the search analyst.

Strongly Agree							Strongly Disagree
	X*						
7	6	5	4	3	2	1	

2. The interview was very helpful to me.

Strongly Agree							Strongly Disagree
			X				
7	6	5	4	3	2	1	

3. I was very dissatisfied with the interview.

Strongly Agree							Strongly Disagree
					X		
1	2	3	4	5	6	7	

4. The search analyst understood my request when the interview was finished.

Strongly Agree							Strongly Disagree
X							
7	6	5	4	3	2	1	

5. Generally, it was not a successful interview.

Strongly Agree							Strongly Disagree
						X	
1	2	3	4	5	6	7	

6. I expect the online search to be highly successful.

Strongly Agree							Strongly Disagree
	X						
7	6	5	4	3	2	1	

7. I felt ill-at-ease during the interview.

Strongly Agree							Strongly Disagree
		X					
1	2	3	4	5	6	7	

8. The search analyst understood my purpose for requesting a computer-search.

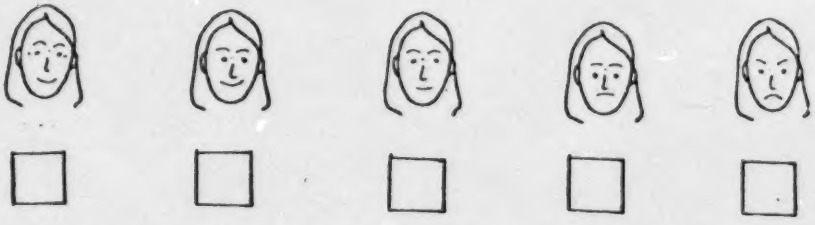
Strongly Agree							Strongly Disagree
X							
7	6	5	4	3	2	1	

9. The interview fell short of my expectations.

Strongly Agree							Strongly Disagree
	X						
1	2	3	4	5	6	7	

*For example, case 504's responses are shown here. The numbers below each scale indicate coding: 7 was used for the positive evaluation, 1 for the most negative response.

Please mark the face that best describes your feelings about your presearch interview.*



*The faces scale was deleted after the Cortland pretest.

Table 2. Presearch Interview Project to Searcher/Librarian

The purpose of these questions is to obtain your opinions about your interview with the person requesting the search. Please indicate the degree to which you agree or disagree that each statement describes the interview. Use the fourth or middle position to represent "neutral," then moving out from the center, "slight" agreement, then "moderate" agreement, and finally, "strong" agreement.

1. I enjoyed working with the requester.

Strongly Agree							Strongly Disagree
	X*						
7	6	5	4	3	2	1	

2. The interview was very helpful to me.

Strongly Agree							Strongly Disagree
		X					
7	6	5	4	3	2	1	

3. I was very dissatisfied with the interview.

Strongly Agree							Strongly Disagree
						X	
1	2	3	4	5	6	7	

4. I understood the request when the interview was finished.

Strongly Agree							Strongly Disagree
X							
7	6	5	4	3	2	1	

5. Generally, it was not a successful interview.

Strongly Agree							Strongly Disagree
			X				
1	2	3	4	5	6	7	

6. I expect the online search to be highly successful.

Strongly Agree							Strongly Disagree
	X						
7	6	5	4	3	2	1	

7. I felt ill-at-ease during the interview.

Strongly Agree							Strongly Disagree
X							
1	2	3	4	5	6	7	

8. I understood the requester's purpose for a computer-search.

Strongly Agree							Strongly Disagree
						X	
7	6	5	4	3	2	1	

9. The interview fell short of my expectations.

Strongly Agree							Strongly Disagree
			X				
1	2	3	4	5	6	7	

*For example, case 504's responses are shown here. The numbers below each scale indicate coding: 7 was used for the positive evaluation, 1 for the most negative response.

TABLE 3. Satisfaction Questionnaire--Question Types

(Note: Numbers in parentheses refer to questions in Tables 1 and 2.)

I. Task Questions

A. Information Transfer:

(4.) The search analyst understood my request when the interview was finished (Hecht, Hitchingham).

(8.) The search analyst understood my purpose for requesting a computer search (Hitchingham).

B. Search Results:

(6.) I expect the online search to be highly successful.

II. Affect Questions

(1.) I enjoyed working with the search analyst (Hecht, Gothberg).

(7.) I felt ill-at-ease during the interview.

III. Global Questions

*(2.) The interview was very helpful to me.

(3.) I was very dissatisfied with the interview (Hecht, Gothberg).

(5.) Generally, it was not a successful interview (Hecht).

(9.) The interview fell short of my expectations.

---

*Excluded in factor analysis because of lack of factor purity. See Tables 6 and 7 for test of this theoretical classification.

3. Pretest

The questionnaires were pretested at SUNY Cortland along with other procedures. The faces scale was deleted after the pretest. Respondents found it distracting. Inspection of pretest responses indicated no difficulty in inderstanding the questions. Responses were positive as expected, but showed variability. No other changes were made to the questionnaires.

4. Plan for analysis

The satisfaction measures are the dependent variables in the research design. Analysis of the user satisfaction responses and the search analyst responses will include: question by question descriptive statistics and correlation analysis of the variables. Correlation will be used to form satisfaction scales along logical and empirical dimensions. Both the scales and individual items will be used as dependent variables against tasks, verbal behaviors and nonverbal behaviors. The situation variables, e.g., search purpose (Tessier and Fargnioli, 1979), will also be related to the satisfaction measures.

III. SATISFACTION RESULTS

This section reports the results of the analysis of user satisfaction and search analyst satisfaction measures. First, description of results for single questions are presented; second, results of factor analyses are described; third, description of scores on the resulting scales are reported; fourth, the relation to situational variables are described; finally, the results are discussed. In general, the dimensions of satisfaction were confirmed; the relation of situation to satisfaction measures were observed only for librarian satisfaction measures.

1. Results from individual questions.

Each questionnaire (user and search analyst) was composed of 9 questions. Both user and searcher completed one form for each interview completed. 80 completed questionnaires were obtained from users; from searchers, 81 completed questionnaires. Taking user and analyst responses as a set, completed sets were available for 79 cases.

Frequencies were reported in the codebook (Tessier and Fargnioli, 1979) and will not be repeated here. Table 4 reports medians, means and standard deviations for users and librarians on each variable.

The means are strongly positive. Reasons for the skew are speculative. To this researcher, the most logical reasoning is that the field study created conditions that increased positive responses. The satisfaction questionnaires constituted only a small step in the total user and librarian process. Especially for the user, the questions may have lacked importance in the contrast to other events. This hypothesis is borne out by two observations: first, user means tend to be higher than librarian means; librarians repeated the form for each interview. Second, in an evaluation study (Tessier, in process), the skew on the same questions was markedly less. That study did not include videotaping and stimulated recall sessions, so that the user could focus more carefully on the evaluation process. Alternatively, the study focus on the presearch interview and the search analyst techniques may have created the demand for positive evaluation. A third explanation is that the responses are not biased, but that our sampling method did not obtain an adequate sample of dissatisfied users. In any case, the positive response bias is a source of concern in further analysis and conclusions.

There are practical concerns arising from the positive responses. First, the lack of variability decreases the observable relation to the independent variables. Given the

TABLE 4. Data on Nine Questions in Satisfaction Questionnaire (n=79)

	Type*	User			Searcher/ Librarian		
		median	mean	s.d.	median	mean	s.d.
1. I enjoyed working with the search analyst.	II	7	6.34	.88	7	6.17	1.033
2. The interview was very helpful to me.	III	6	5.81	1.1	6	5.97	1.12
3. I was very dissatisfied with the interview.	III	7	6.6	1.002	7	6.1	1.3
4. The search analyst understood my request when the interview was finished.	I	7	6.5	.9	7	6.4	.976
5. Generally, it was not a successful interview.	III	7	6.3	.87	7	6	1.53
6. I expect the online search to be highly successful.	I	6	5.7	1.34	6	5.7	1.4
7. I felt ill-at-ease during the interview.	II	7	6.1	1.4	6	5.4	1.8
8. The search analyst understood my purpose for requesting a computer search.	I	7	6.11	1.3	7	6.29	1.3
9. The interview fell short of my expectations.	III	7	6.14	1.3	7	5.7	1.8

*See Table 3.

larger standard deviations for librarians, the librarian response data may show more relationships to the independent variables. Second, the use of scales is indicated to increase variability.

2. Factor analyses and scale construction.

In formulating the questionnaire, two specific dimensions -- task and affect -- and a global dimension were included. Factor analysis on user responses was used to validate these theoretical dimensions. Then, scales were constructed from the resulting dimensions. For factor analysis and scale construction, user responses were used. User, rather than librarian, responses were preferred since each case represented a different user. Multiple satisfaction measures for the same search analysts might have introduced bias in the resulting factor structures. Correlations for the user responses (N=80) are shown in Table 5. Correlations above .302 for 80 respondents are significant at the .01 level.

A series of principle axis factor analyses with varimax rotation were executed using SAS, version 79.3A, as implemented on the Syracuse University Academic Computer. Since analyses were exploratory, two types of variation were considered: first, the full sample was used and then outliers on the negative end were excluded to check that these did not unduly affect the model (N=67). Second, particular variables were excluded to test the robustness of the model: particularly, helpfulness and ill-at-ease were excluded.

The rotated factor patterns for three solutions are shown in Table 6: a.) All variables, N=80; b.) All variables, N=67, excluding outliers; c.) Helpful and ill-at-ease out, N=67.

It should be noted that the order of the factors varied, but that the same variable pairs appeared together: Success and Expectations in the interview; Enjoyed and Dissatisfied; and Understood request and Purpose (in 2 of the 3 solutions).

Helpfulness consistently showed middle range loadings on at least three factors. Its lack of factor purity is indicative of its global or summary nature (Type III).

Since ill-at-ease seemed particularly vulnerable to effects of the study manipulation (especially the videotaping), it was excluded along with helpfulness in some factor solutions. The other variables remained stable when these variables were deleted.

TABLE 5. Correlation Matrix for User Responses (n=80)

Measure:	ENJOY	HELP*	DISAT	REQUEST	SUCCES	EXPRES	ILLEASE*	PURPOSE	EXPINT
Type:	II	III	III	I	III	I	II	I	III
ENJOY	1.00000	.52197	.43448	.14897	.20900	.13212	.27278	.33265	.27616
HELP	.52197	1.00000	.24363	.31805	.36853	.32277	.17331	.29036	.48201
DISAT	.43448	.24363	1.00000	.10664	.24828	-.04637	.10288	.11818	.21356
REQUEST	.14897	.31805	.10664	1.00000	.21246	.21170	.03748	.26903	.17900
SUCCES	.20900	.36853	.24828	.21246	1.00000	.08529	.43131	.36147	.55218
EXPRES	.13212	.32277	-.04637	.21170	.08529	1.00000	-.03026	.01280	.15391
ILLEASE	.27278	.17331	.10288	.03748	.43131	.03026	1.00000	.33564	.40908
PURPOSE	.33265	.29036	.11818	.26903	.36147	.01280	.33564	1.00000	.32503
EXPINT	.27616	.48201	.21356	.17900	.55218	.15391	.40908	.32503	1.00000

Note: .302 = Sig .01

*Excluded in principle axis analyses.

TABLE 6. Rotated Factor Patterns for User Responses

(A.) (n=80)

Type*	v		FACTOR1	FACTOR2	FACTOR3	FACTOR4
II	1	ENJOY			0.78883	
III	2	HELP	0.31905	0.55823	0.47255	0.25757
III	3	DISAT			0.84821	
I	4	REQUEST				0.86704
III	5	SUCCES	0.75937			
I	6	EXPRES		0.89200		
II	7	ILLEASE	0.79783			
I	8	PURPOSE				0.62783
III	9	EXPINT	0.74760			

(B.) (n=67), (9 Var)

Type		FACTOR1	FACTOR2	FACTOR3	FACTOR4	FACTOR5
II	ENJOY			0.73586		
III	HELP					
III	DISAT			0.86070		
I	REQUEST				0.91699	
III	SUCCES	0.83742				
I	EXPRES		0.85723			
II	ILLEASE	0.60105				
I	PURPOSE					0.83289
III	EXPINT	0.81385				

(C.) (n=67), (7 Var)

Type	v		Event FACTOR1	Comfort FACTOR2	Results FACTOR3	Lib. Understanding FACTOR4
II	1	ENJOY		0.81702		
III	3	DISAT		0.84514		
I	4	REQUEST				0.85616
III	5	SUCCES	0.84020			
I	6	EXPRES			0.93905	
I	8	PURPOSE				
III	9	EXPINT	0.86385			0.62164

*I=Task; II=Affect; III=Global

The factor analytic procedures resulted in the identification of 4 subscales (see Table 7): a.) Results (v. 6); b.) Librarian understanding (v. 4 and 8); c.) Interview seen as an event (v. 5 and 9); and d.) Interview comfort (v. 1 and 3).

The factor solutions confirmed the theoretical classification of the variables, with some differences. Factor A (focus on search results) and factor B (librarian understanding) are those identified in the design as task questions (results and information transfer, Type I, Table 3). Factors C and D each contain components of affect questions (Type II) and global questions (Type III). One interpretation is that factor D is actually the affective factor, while factor C is a global evaluation factor. The questions on each factor intuitively support that interpretation, except that ill-at-ease clearly correlated to the global questions. Given the mixing of variables in C and D, both factors were used as separate scales and neither was identified as global satisfaction.

Factor scores for individual respondents were not computed from the factor solutions. Instead, the analysis provided information for summing the user's responses on each subscale identified through the factor analyses.

Two global measures were also derived: the sum of all variables except ill-at-ease (maximum score, 56); and helpful (v. 2).

3. Description of scores on the resulting scales.

Since both theory and observation were fairly consistent (see Table 7), subscales based on the observed factors were computed for each respondent. Analysis of the resulting satisfaction scale scores is reported in this section.

In computation of each user and librarian scale score, ill-at-ease was deleted. Helpful was interpreted as a global variable. Additionally, the sum of all scores (except ill-at-ease) was computed for each respondent. Table 8 indicates the correlations from the resulting subscales. These are typically lower than the correlations of the individual items in a subscale.

For descriptive analysis of scale scores, those cases with scale scores for both users and librarians were used (N=77). Exclusions were cases 105, 308, and 403 (missing values); and 305 and 408 (extreme outliers).

Table 9 displays the descriptive statistics for each of the subscales and for the summary measures.

TABLE 7. Factors Derived in Analysis of User Satisfaction Questionnaire

Results:*		Type**
(A.)	Focus on search results/info/problem:	
	v.6 expect online search to be successful	I
(B.)	Librarian understanding:	
	v.4 searcher understood my request	I
	v.8 searcher understood my purpose	I
(C.)	The interview seen as an event:	
	v.5 not a successful interview	III
	v.7 ill-at-ease	II
	v.9 fell short of my expectations	III
(D.)	Interview comfort:	
	v.1 enjoyed working with with searcher	II
	v.3 very dissatisfied with interview	III

*Helpful (v. 2) loaded on all factors, so was interpreted to be global.

**I=Task; II=Affect; III=Global

TABLE 8. Factor to Factor Correlations (Subscales)

Subscales:	A	B	C	D	Item Correlation for Subscale
A. Search Results Focus	1.00	.26	.31	.04	--
B. Librarian Understanding	.26	1.00	.31	.17	.26
C. Interview as Event	.31	.31	1.00	.26	.55
D. Interview Comfort	.04	.17	.26	1.00	.43
Globals:					
Total (Var. 1-9, excluding 7)	.41	.76	.83	.70	
Help (Var. 2)	.23	.25	.43	.37	
Total of other scales	.16	.56	.70	.49	

*See Tables 3 and 7.

TABLE 9. Satisfaction Scales (n=77)

	User				Searcher/ Librarian			
	median	mean	s.d.	corr. to sum	median	mean	s.d.	corr. to sum
Sum of seven satisfaction questions (#7 excluded--"ill-at-ease")	52	50.72	4.28		50	48.8	6.24	
Helpful (#2)	6	5.85	1.02		6	6	1.12	
Dimensions (see Table 7):								
A. Expectations about results of search (#6)	6	5.84	1.13	.41	6	5.79	1.27	.653
B. Librarian understanding (#4 & #8)	13	12.81	1.42	.76	14	12.7	1.75	.632
C. Interview seen as an event (#5 & #9)	14	13.11	1.26	.83	13	11.9	2.55	.79
D. Interview comfort (#1 & #3)	14	13.11	1.25	.70	13	12.4	1.93	.79

The subscale scores are highly positive. Particularly, the user means for scale scores on Interview task and Interview comfort are within one interval of the maximum (14). Such lack of variance typically impedes the sensitivity of the dependent variable in hypothesis testing. The subscale scores for librarians are systematically lower than for users. It may be expected that librarian scores may be more powerful in analysis of the independent variables.

4. Satisfaction scores in relation to situation variables.

One class of independent variables collected by the project are the situation and person characteristics of the interview. These variables and the descriptive statistics are described in the codebook (Tessier and Fargnioli, 1980). There are three kinds of these variables: characteristics of the user and the request; characteristics of the librarian; and characteristics of the particular interview. These independent variables are shown in Table 10. This section describes the observed relationships of these variables to the satisfaction measures. Correlational analysis was used to test variable relations.

Analysis of user satisfaction scales and user characteristics, librarian characteristics, and interview characteristics yielded no significant findings. This analysis was disappointing, particularly since such variables as recall requirement, user experience, and librarian experience are potentially important aspects in user satisfaction. Given our results, we have little indication that situation variables affect the user's satisfaction with the interview.

Two explanations are possible: that there is no such relationship between situation and user satisfaction, or that the relationship exists but the study methods obscured it. Significant relationships between user satisfaction and some verbal and nonverbal behaviors (Crouch, 1981; Genova; 1981) indicate that the measures are somewhat sensitive to more immediate conditions than the characteristics studied here. For that reason, the measure appears to be adequate; a lack of findings may well indicate that no such relationships exist. The situation variables, including user experience, purpose, recall requirement, and librarian experience, and interview characteristics appear to be of little importance in the user's assessment of satisfaction.

Librarian satisfaction was observed to be correlated to librarian characteristics and interview characteristics, but not to user characteristics over all cases. Table 11 displays significant correlations between librarian satisfaction and activity and experience. The patterns are interesting. First, activity in online searching is

TABLE 10. Characteristics of Users, Librarians, and the Interview

User and Request Characteristics

-- recall requirement
-- planned use
-- number of citations expected
-- number of previous online searches
-- knowledge of the topic area
-- status
-- academic or clinical orientation
-- academic discipline

Librarian Characteristics

-- years of general reference experience
-- percent of work time on search related activities
-- average number of searches/week
-- frequency of attendance at update sessions
-- number of years of online experience

Interview Characteristics

-- interview took place at regular location
-- presearch form was used
-- user was present at search
-- user saw output before stimulated recall
-- was there a charge for the search

TABLE 11. Correlations Between Librarian's Satisfaction Scores and Librarian's Activity and Experience

	% of work time allocated to searching	number of searches per week	number of years of searching experience	number of years in reference service
Sum of scales, v.7 excluded	.34	.31		
A. Results expectations (v.6)		.25		
B. Librarian understanding (v.4 & 8)	.29	.26	.32	
C. Interview seen as an event (v.5 & 9)	.31			
D. Interview comfort (v.1 & 3)	.23	.24		.28
v.7 Ill-at-ease	.30	.27		

Pearson's r over .22 is significant at the .05 level.

directly correlated to all satisfaction scales. Length of experience in searching and in reference is also related, but not so consistently. Generally, the conclusion is that more active searchers express more satisfaction with the interview.

The relationship of librarian's satisfaction to conditions of the interview is perhaps more interesting and certainly less consistent. Table 12 presents the significant correlations. Interestingly, if the user had seen the output before the forms were completed, the librarian expressed less satisfaction with the interview as a whole and as an event, and tended to be less at ease. The correlations of helpful and interview comfort to having the interview in the normal workplace and inversely to charges seems logical and confirms the classificaton of the variables. Charging policies apparently affect the librarian's perception of the interview, although no such relationship was observed to user satisfaction. Charging does appear to be a professional issue to these searchers.

Ill-at-ease is also interesting; scoring the variable required a 7 when the librarian disagreed that he felt ill-at-ease. The double reverse means that a 7 score is at-ease, a lower score is less-at-ease. Higher at-ease scores were observed when a form was used, when the user was not present at the search, and when the user had not yet seen the output.

In sum, the librarian satisfaction scores were related to conditions of the paticular interview and to librarian characteristics. The user characteristics showed no systematic correlations.

TABLE 12. Correlations Between Librarian's Satisfaction Scores and Interview Characteristics

	took place at regular work place	used a form	user present at search 0=no, 1=yes	user saw output before questionnaire answered 0=no, 1=yes	user charge 0=no, 1=yes
Sum of scales, v.7 excluded				-.24	
v.2 Helpful	.45				-.38
A. Results expectation (v.6)					
B. Librarian understanding (v.4 & 8)					
C. Interview seen as an event (v.5 & 9)				-.298	
D. Interview comfort (v.1 & 3)	.44				-.321
v.7 Ill-at-ease		.379	-.302	-.43	

Pearson's r over .22 is significant at the .05 level.

5. Discussion of the study's results.

The most interesting finding of the study of interview satisfaction measures was the identification of the dimensions through logical classification and factor analysis. The theoretically postulated dimensions were partially borne out in the data. Further research, including a larger sample, is appropriate, since the respondent pool used in this study is small for factor analytic techniques. Also, reduction in additional field procedures and perhaps, quota sampling of dissatisfied users, should clarify the variable structure observed in this study.

The lack of significant relationship between the situation variables and user satisfaction measures is not conclusive; alternative hypotheses -- that no relationship exists, or that the satisfaction measures were insensitive -- can be clarified first by the study of behavior and satisfaction in other sections of this report, and second, by additional research with an improved satisfaction measure. Again, simplified procedures and enhanced evaluation focus seem warranted.

The pattern of correlations to librarian satisfaction indicate the librarians' concern with such issues as charging, the use of forms, and presence of the user at the search. User characteristics and query characteristics did not affect librarian satisfaction in this study.

A major theme of this report is the difficulty encountered in the measurement of satisfaction in such a way that responses show adequate variability. In addition to the enhancements suggested above (quota sampling, simplified fielding, longer instruments), our own experiences suggest that alternative data collection methods are warranted. During stimulated recall sessions at the library sites, some satisfaction information was volunteered by both users and search analysts (Wargula, Lucia, and Fargnioli, 1981). In depth interviews on the satisfaction of the interview might provide insights not obtained through the questionnaire method. For comparability among respondents, however, some scale measures seem appropriate.

Finally, the measures of satisfaction show some relation to the behavioral independent variables (reported by Cochrane, Crouch, and Wargula). Although the measurement of satisfaction requires improvement, our results confirm the utility of the approach. The fine microscope of the videotape analysis, coupled with even these satisfaction measures, provides insights into appropriate presearch interview behaviors.

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